

# Disease Updates

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## Dogs

**Parvovirus** was diagnosed in 9 puppies, 4-6 months in age. In early June two puppies from a local animal shelter were diagnosed with enteritis due to parvovirus infection. In mid-June an additional six puppies, all from the same local animal shelter as the previous cases, were diagnosed parvovirus infections. One additional case of parvovirus enteritis was diagnosed from a different kennel in early May.

**Canine Distemper (Morbillivirus)** was diagnosed in 6 dogs.

Fungal nephrosis due to severe aspergillosis caused the death of a neutered male German Shepherd. **Aspergillus** species are uncommon pathogens, however, they can cause opportunistic infections. German Shepherds appear to be predisposed to infections of **Aspergillus terreus** and **Aspergillus deflectus**, although the reason for this susceptibility is not known.

**Oxalate nephrosis (ethylene glycol toxicity)** was the cause of death of a 7-month old male pit bull. This dog was euthanized after presenting with symptoms of green nasal discharge, ataxia, weakness, and temperature of 99.7°F. The presumptive clinical diagnosis was canine distemper. There was no known history of ethylene glycol ingestion.

**Dirofilaria immitis (heartworms)** caused significant pulmonary lesions in one adult neutered male dog and was found in another neutered male that died of hemangiosarcoma in the right atrium.



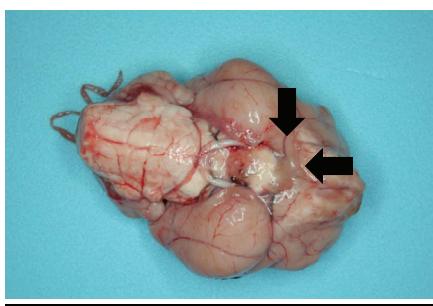
## Cats

**Feline panleukopenia (FPV)** was diagnosed in 4 kittens and 1 adult cat. Additionally, two kittens from the same local animal shelter were diagnosed with enteritis, suspect panleukopenia.

**Feline Infectious Peritonitis (FIP)** was diagnosed in 3 kittens.

**Bordetella bronchiseptica** was isolated from lung culture of a spayed female lilac point Siamese cat diagnosed with severe diffuse suppurative consolidating bronchoalveolar pneumonia.

**Cryptococcus neoformans** infection was found in two neutered domestic cats.



*Cryptococcus neoformans* in cat brain. (Case 206-2605)



## Chickens

Twenty-three adult male game fowl were submitted in early May by county animal control related to two ongoing cockfighting investigations. Necropsies were performed and lesions (lacerations/punctures, hemorrhages) were determined to be consistent with trauma. In addition, two game fowl roosters and one hen were submitted in mid-May. Trauma was the cause of death in the hen and one rooster. The third game fowl contained no gross lesions. All game fowl tested negative for **Newcastle Disease** and **Avian Influenza**.



## Other Avian

**Mycobacterium avium (avian tuberculosis)** was found in the lungs, liver, and intestines of one 14-year-old male Hanging Parrot.

**Atoxoplasmosis** was diagnosed in a juvenile goldfinch. Numerous protozoa were found in the intestinal epithelium and lumen. **Atoxoplasma** species are host-specific coccidian protozoa primarily affecting passerines. They are transmitted via the fecal-oral route after ingestion of oocysts. They are not transmitted by ectoparasites as was previously thought. Diarrhea, non-specific illness, and death sometimes occur and diagnosis is difficult in living birds. Additionally, treatment is problematic, as **Atoxoplasma** species do not respond to typical coccidian treatment regimes.

Three house finches were submitted from the same facility. The birds were euthanized and were all showing signs of "not gaping well." A necropsy was performed on the largest finch and **trichomoniasis** was diagnosed.

**Trichomonads (*Trichomonas gallinae*)** are one-celled parasites of the digestive tract (pharynx, esophagus, crop, or intestines) causing a disease known as "canker" in pigeons and doves as well as "frounce" in falcons and similar disease in a number of wild bird species. The parasite can cause caseous, necrotic foci, which obstruct the upper digestive tract. **Trichomoniasis** can cause severe weight loss and diarrhea in birds especially when present in the lower digestive tract. They can remain in low numbers for long periods of time until stress and other factors allow the organism to grow to significant numbers causing clinical disease. Transmission is direct by parents feeding offspring and indirect through fecal contamination of feed and water.

A crow submitted in mid-June tested positive for **West Nile Virus** by Reverse Transcriptase Polymerase Chain Reaction. On gross examination, the liver was enlarged, diffusely mottled red/pale tan, and friable. The spleen was also markedly enlarged. Upon microscopic examination, the liver showed extensive tissue autolysis. The heart contained diffuse moderate interstitial edema, mild increased

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interstitial cellularity (mononuclears), and patchy myofiber degeneration and necrosis. The spleen was highly cellular, containing mixed cells, numerous blasts, macrophages, fibrin, hemorrhage, and necrotic foci. The brain showed marked vascular congestion. No microscopic lesions were found in the pancreas, kidneys, intestines, bursa, proventriculus,



## Swine

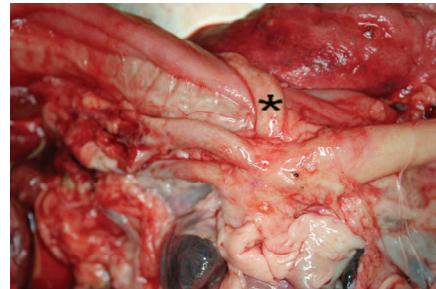
Spirochetes consistent with the bacteria *Brachyspira (Serpulina)* and nematodes (*Trichuris*) were found within the necrotic colonic mucosa of an immature female Yorkshire-cross pig diagnosed with chronic necrotizing and ulcerative colitis and sand impaction. Both are pathogenic to growing swine and can cause severe intestinal lesions, diarrhea, and death. The combination of the two disease agents can have a more severe effect. Diet composition may help the establishment of these parasites in the colon of swine. Diets high in insoluble fiber with a relatively low digestibility are believed to be more difficult for swine to digest in the small intestine and allow more fermentable residue to enter the large intestine where these disease agents can reside. Therefore, in addition to treating for the bacteria and parasites, it has been suggested that a diet with high levels of easily digested carbohydrates may also be important in treatment. There was a significant impaction of sand within the cecum and colon. The role of sand in the pathogenesis of the colitis in this animal is unknown.

Hemorrhagic typhlocolitis due to *Trichuris suis* (whipworm) was diagnosed in a female, 4-month old Hampshire pig. *Trichuris suis* is a nematode that infects pigs, wild boars, monkeys, and humans. They are widely distributed, being a fairly common and persistent problem in swine. They reside in the cecum, colon, and appendix (human), with migration limited to the walls of the gut. *Trichuris* in low numbers is usually not an important pathogen by itself, but may cause sufficient damage to enable secondary pathogenic invaders to become established. Pigs most susceptible to whipworm infections and accompanying diarrhea or bloody scours are in the 2-6 month age group. Immunity seems to keep infestations low thereafter.



## Equine

Tyzzer's disease (*Clostridium piliforme* hepatitis) was diagnosed in a 6-week old thoroughbred foal. Tyzzer's disease is an acute, highly fatal, epizootic enterohepatic disease of neonatal or weanling animals. It has been reported in numerous animal species, including horses, cattle, mice, rats, hamsters, guinea pigs, rabbits, foxes, and coyotes. The causative agent, *Clostridium piliforme*, is a gram-negative, spore-forming, motile, obligate intracellular bacterium with peritrichous flagella. The vegetative form causes the disease state, and appears as bundles or "haystacks" within its target cells, i.e. enterocytes and hepatocytes. In horses, Tyzzer's disease usually affects one- to six-week-old foals. Outbreaks of the disease are sporadic, typically affecting very few animals in a herd. This suggests that the disease is not highly contagious, and may be limited to immunocompromised foals. The



An extra artery\* arises at the base of the left subclavian artery, and crosses dorsally over the esophagus to the right lateral side of the trachea (anomalous right subclavian artery) of a 14 year old Airedale Terrier. (Case 206-2340)

pathogenesis of equine Tyzzer's disease is incompletely understood. *Clostridium piliforme* is transmitted by the fecal-oral route. The initial site of infection is the intestinal epithelium, from which the organism is transported hematogenously to the liver. In rodents, transplacental transmission also occurs, but this has not been demonstrated in the horse.



## Other Animals

Acute cardiac necrosis was diagnosed in an adult male guinea pig. Acute cardiac necrosis can be due to many causes including uremia, hypercalcemia due to renal failure, hypervitaminosis D due to toxic plant ingestion or certain rat poisons, certain drugs such as doxycycline, and ingestion of cardiac glycoside containing

plants. Oleander (*Nerium oleander*) and foxglove (*Digitalis purpurea*) are two plants commonly associated with acute cardiac toxicosis in animals. The advanced decomposition in this animal precluded further evaluation of the tissues.



Half a rodent submitted as a bat for rabies testing.



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